

ABSTRACT OF THE DISCLOSURE

5 A semiconductor device having a main processor and a
coprocessor for data processing is disclosed, the device
comprising a main program memory for storing main processor
instructions and a first portion of coprocessor instructions, a
coprocessor program memory for storing a second portion of
coprocessor instructions, and a predecoder for predecoding at
10 least one bit of each instruction fetched from the main program
memory and for generating an active coprocessor control signal
upon predecoding a coprocessor type instruction, wherein the
second portion of coprocessor instructions are fetched directly
from the coprocessor program memory and the first portion and the
15 second portion of coprocessor instructions are processed by the
coprocessor upon receipt of the active coprocessor control
signal.